

Notice of Allowability

Application No.

09/826,078

Examiner

DuyVu n Deo

Applicant(s)

WOO ET AL.

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to BOA decision on 3/31/04.
2. ☒ The allowed claim(s) is/are 4, 5, 7, 8 and 10-15.
3. ☒ The drawings filed on 05 April 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.


THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: please see attached papers of claims.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-3:30; with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DVD
7/19/04



1. (canceled)
2. (canceled)
3. (canceled)

APPENDIX

2 4. (Previously ^{presented} Amended) The method according to claim 8, wherein the at least one heating element comprises a lamp.

3 5. (Previously ^{presented} Amended) The method according to claim 4, further comprising powering the at least one lamp from about 2 Amp to about 7 Amps during the introduction of both of the first and second substrates to the deposition chamber and during deposition of the nickel layer.

6. (canceled)

4 7. (Previously ^{presented} Amended) The method according to claim 8, wherein each substrate comprises silicon and the deposited nickel layer is heated to form a nickel silicide layer.

8. (Previously ^{presented} Amended) A method of forming nickel layers in a deposition chamber on a plurality of substrates, the deposition chamber having at least one heating element the method comprising:

heating the deposition chamber with the at least one heating element prior to introduction of a first substrate;

introducing the first substrate to the deposition chamber while heating the deposition chamber with the at least one heating element;

depositing a layer of nickel on the first substrate while heating the deposition chamber with the at least one heating element;

removing the first substrate from the deposition chamber while heating the deposition chamber with the at least one heating element;

introducing a second substrate to the deposition chamber while heating the deposition chamber with the at least one heating element; and

depositing a layer of nickel on the second substrate while heating the deposition chamber with the at least one heating element, wherein

the chamber is heated with the at least one heating element continuously between the removal of the first substrate and the introduction of the second substrate.

9. (canceled)
10. (Previously Amended) ^{presented} The method according to claim 8, further comprising cleaning each substrate prior to depositing the layer of nickel.

11. (Previously Amended) ^{presented} The method according to claim 8, wherein the layer of nickel is formed on exposed silicon surfaces of each substrate and the method further comprising:

heating the layer of nickel at a temperature of approximately 300 °C to approximately 550 °C to form a nickel silicide layer.

12. (Previously Amended) ^{presented} The method according to claim 11, wherein the heating of the layer of nickel to form the nickel silicide layer is carried out for approximately 5 seconds to approximately 2 minute.

13. (Previously Amended) ^{presented} The method according to claim 12, further comprising removing unreacted nickel by wet chemical etching.

presented
9 14. (Previously ~~Amended~~) The method according to claim 13, wherein the removing unreacted nickel is carried by immersing each substrate in a solution of NH_4OH , H_2O_2 and water or immersing each substrate in a solution of H_2SO_4 , H_2O_2 and water.

presented
10 15. (Previously ~~Amended~~) The method according to claim 14, further comprising forming a conductive connection to the nickel silicide layers without using a cap layer.